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2023

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**JOHOR
INNOVATION
INVENTION
COMPETITION
AND
SYMPOSIUM
2023**



" Innovation Inspires a Society
to be Critical and Creative"

JOHOR INNOVATION INVENTION COMPETITION AND SYMPOSIUM 2023



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**AHMAD KHUDZAIRI KHALID
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**Cawangan Johor
Kampus Pasir Gudang**

2023



First Edition 2023

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e ISBN: 978-967-0033-17-4

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**Art & Cover Designer: DR. WAN MUNIRAH WAN MOHAMAD
& DR. NUR IDAYU ALIMON**

**Published in Malaysia by
Universiti Teknologi MARA Cawangan Johor
Kampus Pasir Gudang
81750 Masai**





Preface

In the name of Allah, the Almighty who gives us the enlightenment, the truth, the knowledge and with regards to Prophet Muhammad (peace be upon him) for guiding us to the straight path. We thank to Allah for giving us guidance and strength to write this e-book.

This e-book compiles the extended abstracts that submitted to Johor Innovation Invention Competition and Symposium 2023 (JIICaS2023), where JIICaS2023 is a virtual platform for all creative minds to share and present their invention and innovation. The extended abstracts are divided into two categories, which are Category A (Higher Educational Student/ Any Recognized Institutional Students in Malaysia) and Category B (Primary/ Secondary School Students / Special Education School Students in Johor). Each abstract gives a brief background on the innovation or project.

We hope that this e-book will help the readers to get to know the innovation done by the students from both categories and get some ideas to develop future innovation products.



GARDEN RAKE ROLLER

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ABSTRACT

Malaysia has a tropical weather which often quite humid. Despite this, the weather is never too hot and temperatures range from a mild 20°C to 30°C average throughout the year; however the highlands experience cooler temperatures. This brought Malaysia a fertile soil and forests still cover about 54% of the total land area. However, due to extensive usage of garden rakes makes it uncomfortable at spinal and abdominal muscles during garden raking with two rakes and rake handles and advisable to search for better rake. Installed with 1" diameter wooden, metal or stainless steel handle. They come with a long handle and a head with a set of equally spaced steel that rolled approximately 10 inches long. The rolled equipped with medium hard blades that could make sure the dead leaves and cut grasses came along while rolled it. As mentioned above, this garden roller rake has a roller that helps to collect the dead leaves and bring it together while using this equipment. Furthermore, this garden rake equipped with medium hard blades. The function of this blades specifically helps to take along all the dead leaves and cut grasses. In addition, this blades functions as detaching the soil. This process is very crucial to make sure that minerals and, air and water is not clog or soften the soil. Later it makes a good fertile soil. Potentially commercialize in Malaysia since the choices of rake is limited.

Keywords: *Garden rake roller; Blade;*

1.0 INTRODUCTION

Malaysia has a tropical weather which often quite humid. Despite this, the weather is never too hot and temperatures range from a mild 20°C to 30°C average throughout the year; however the highlands experience cooler temperatures. This brought Malaysia a fertile soil and forests still cover about 54% of the total land area. However, due to extensive usage of garden rakes makes it uncomfortable at spinal and abdominal muscles during garden raking with two rakes and rake handles and advisable to search for better rake.

2.0 OBJECTIVE

- 1 To innovate new tool of rake roller in the market.
- 2 To suggest new usage of rake roller.

3.0 DESCRIPTION OF INNOVATION/METHODOLOGY

Installed with 1" diameter wooden, metal or stainless steel handle. They come with a long handle and a head with a set of equally spaced steel that rolled approximately 10 inches long. The rolled equipped with medium hard blades that could make sure the dead leaves and cut grasses came along while rolled it. As mentioned above, this garden roller rake has a roller that helps to collect the dead leaves and bring it together while using this equipment. Furthermore, this garden rake equipped with medium hard blades. The function of this blades specifically helps to take along all the dead leaves and cut grasses. In addition, this blades functions as detaching the soil. This process is very crucial to make sure that minerals and, air and water is not clog or soften the soil. Later it makes a good fertile soil. Potentially commercialize in Malaysia since the choices of rake is limited.

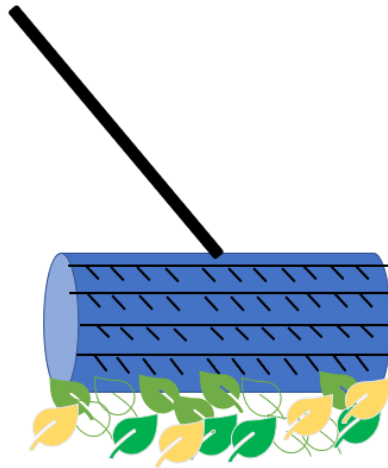


Figure 1: Depiction of garden rake roller

4.0 ADVANTAGE/IMPACT/RESULTS/NOVELTY

This tool comprises of 3 in 1 usage of rake: as a rake, sweeper and also medium hard blades for detaching the soil. Thus, it gives the user efficiency and save time while rake the garden. The most important is it can reduce backache because to take along time to finish the task of collecting dead leaves and cut grasses.

There are a lot of tools for gardening. But this tool is 3 in 1 task at one time. Furthermore, with the current climate in Malaysia it is suitable to commercialize for home or garden owner.

5.0 CONCLUSION

This innovation comes with simple innovation, but it gives impact for the user to the tools. Thus, garden rake roller is had an enthusiastic spirit to be commercialize in the market. With the least price it will be worth for the customer to afford this tool.